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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,118	06/18/2002	Keiichi Kitagawa	L9289.02148	9064
24257	7590	07/07/2006		
STEVENS DAVIS MILLER & MOSHER, LLP 1615 L STREET, NW SUITE 850 WASHINGTON, DC 20036			EXAMINER WONG, BLANCHE	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 07/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/089,118

Applicant(s)

KITAGAWA ET AL.

Examiner

Blanche Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 June 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 June 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date Mar'02, Sep'03, Feb'05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed March 26, 2002 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

- Documents WO 09 618149 is on file, but not listed in the IDS.

### ***Drawings***

2. Figures 1-7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

### ***Specification***

3. The disclosure is objected to because of the following informalities: On p. 1, line 21, "1<sup>st</sup>" should be replaced with --First--.

Appropriate correction is required.

***Claim Objections***

4. Claim 4 is objected to because of the following informalities: "a signal" in line 3 should be replaced with --the signal--. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claim 5** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 5, it is unclear what is meant by quasi-zero, whether it is a zero or greater than zero.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1,2,4,7-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Awater et al. (U.S. Pat No. 6,175,551).

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With regard to claim 1, Applicant's admitted prior art discloses  
converting means (**see S/P in Fig. 1; see also Specification p. 2, lines 8-12**)  
for converting an information signal with a single sequence to information signals with a  
plurality of sequences subjected to spreading processing; and

generating means (**see IFFT in Fig. 1; see also Specification p. 3, lines 3-11**)  
for generating a multi-carrier signal by multiplexing the respective information signals  
with said plurality of sequences subjected to spreading processing on sequence-specific  
carriers (**N subcarriers in Fig. 1; see also Specification, line 11**).

However, Applicant's admitted prior art fails to explicitly show peak power detecting  
means for detecting peak power of said multi-carrier signal; and transmitting means for  
transmitting only a multi-carrier signal whose peak power is not great than a threshold.

In an analogous art, Awater discloses  
peak power detecting means (**peak detector 52, col. 4, line 61; see also Fig. 4**)  
for detecting peak power of said multi-carrier signal; and  
transmitting means (**RF TX 38 in Fig. 4**) for transmitting only a multi-carrier  
signal whose peak power is not great than a threshold (**predefined amplitude, col. 4,  
line 62**).

At the time of the invention, it would have been obvious to a person of ordinary  
skill in the art to include a peak power detecting means and a transmitting means in  
Applicant's admitted prior art. The suggestion/motivation for doing so would have been

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to reduce the peak-to-average power ratio of systems transmitting parallel channels.

Awatramani, col. 1, lines 60-61. Therefore, it would have been obvious to combine Awatramani with Applicant's admitted prior art for the benefit of a peak power detecting means and a transmitting means, to obtain the invention as specified in claim 1.

With regard to claim 2, Applicant's admitted prior art discloses

converting means (**see S/P in Fig. 1; see also Specification p. 2, lines 8-12**)

for converting an information signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing; and

generating means (**see IFFT in Fig. 1; see also Specification p. 3, lines 3-11**)

for generating a multi-carrier signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers (**N subcarriers in Fig. 1; see also Specification, line 11**).

However, Applicant's admitted prior art fails to explicitly show peak power detecting means for detecting peak power of said multi-carrier signal; and regenerating means for regenerating a multi-carrier signal when said peak power exceeds a threshold by multiplexing a signal for suppressing peak power instead of an information signal on at least one specific carrier out of said carriers.

In an analogous art, Jin discloses

peak power detecting means (**peak detector 52, col. 4, line 61; see also Fig. 4**) for detecting peak power of said multi-carrier signal; and

regenerating means (**filter block 56, col. 4, line 67-col. 5, line 1; see also Fig. 4**) for regenerating a multi-carrier signal when said peak power exceeds a threshold by multiplexing a signal for suppressing peak power instead of an information signal on at least on specific carrier out of said carriers.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a peak power detecting means and a regenerating means in Applicant's admitted prior art. The suggestion/motivation for doing so would have been to reduce the peak-to-average power ratio of systems transmitting parallel channels. Awater, col. 1, lines 60-61. Therefore, it would have been obvious to combine Awater with Applicant's admitted prior art for the benefit of a peak power detecting means and a regenerating means, to obtain the invention as specified in claim 1.

With regard to claim 4, the combination of Applicant's admitted prior art and Jin discloses the multi-carrier CDMA communication apparatus according to claim 2.

Awater further discloses a random signal (**impulse generator 54, col. 4, line 64; see also Fig. 4**) as the signal for suppressing peak power.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a random signal as the signal for suppressing peak power. The suggestion/motivation for doing so would have been to reduce the peak-to-average

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power ratio of systems transmitting parallel channels. Awater, col. 1, lines 60-61.

Therefore, it would have been obvious to combine Awater with Applicant's admitted prior art for the benefit of a random signal, to obtain the invention as specified in claim 4.

With regard to claim 7, the combination of Applicant's admitted prior art further discloses **(see also analysis for claim 2)**

sequence converting means **(S/P in Fig. 1)** for converting an information signal with a single sequence to information signals with a plurality of sequences; and

spreading means **(12-1 to 12-N in Fig. 1)** for carrying out spreading processing on said respective information signals with a plurality of sequences.

With regard to claim 8, see analysis for claim 7.

With regard to claim 9, see analysis for claim 1.

With regard to claim 10, see analysis for claim 2.

With regard to claim 11, see analysis for claim 1.

With regard to claim 12, see analysis for claim 2.



With regard to claim 13, see analysis for claim 1.

With regard to claim 14, see analysis for claim 2.

9. **Claims 3 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art as applied to claim 1 above, and further in view of Verma (U.S. Pat No. 6,757,299.

With regard to claim 3, the combination of Applicant's admitted prior art and Awater discloses the multi-carrier CDMA communication apparatus according to claim 2.

However, the combination fails to explicitly show a generating means multiplexing the information signal subjected to error correcting coding processing before spreading processing.

In an analogous art, Verma disclose a generating means multiplexing the information signal subjected to error correcting coding processing (**FEC Encoder 200, col. 1, line 32-33; see also Fig. 1 and Fig. 2, col. 4, lines 36-59**) before spreading processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include an error correcting coding processing. The suggestion/motivation for doing so would have been to provide for a procedure to choose a subcarrier. Verma, col. 3, line 23-27. Therefore, it would have been obvious

to combine an error correcting coding processing with Applicant's admitted prior art and Awater's apparatus, to obtain the invention as specified in claim 3.

With regard to claim 6, the combination of Applicant's admitted prior art and Jin discloses the multi-carrier CDMA communication apparatus according to claim 2.

However, the combination fails to explicitly show a clipping means for carrying out clipping processing on a multi-carrier signal whose peak power exceeds a threshold out of the generated or regenerated multi-carrier signals.

In an analogous art, Verma further discloses a clipping means (**clipper 800, col. 1, line 57; see also Fig. 1**).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a clipping means. The suggestion/motivation for doing so would have been to provide for a procedure to choose a subcarrier. Verma, col. 3, line 23-27. Therefore, it would have been obvious to combine a clipping means with Applicant's admitted prior art and Awater's apparatus, to obtain the invention as specified in claim 6.

#### ***Allowable Subject Matter***

10. Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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**Conclusion**

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

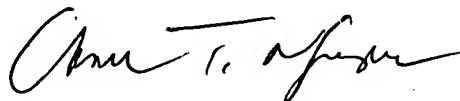
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*BW*

BW

June 26, 2006



CHAU NGUYEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600